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COMPLICATION RATES FOLLOWING PEDIATRIC ADENOTONSILLECTOMY FOR SLEEP DISORDERED BREATHING WITH AND WITHOUT PRE-OPERATIVE POLYSOMNOGRAPHY.

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Background

Obstructive sleep apnea (OSA) affects 1-5% of children. The diagnosis can be suspected clinically or confirmed with polysomnography (PSG). First-line treatment of OSA in children is adenotonsillectomy (T&A). Complications after T&A include bleeding, pain, dehydration, and respiratory events such as pulmonary edema or desaturations. PSG stratifies the severity of OSA, which may affect post-operative management. Our study aimed to determine whether pediatric patients undergoing PSG prior to surgery for sleep disordered breathing (SDB) have similar complication rates as those that did not undergo PSG.

Methods

A retrospective, cross-sectional cohort study was conducted in children, ages 2-17, who underwent an adenotonsillectomy with or without pre-operative PSG over an 18 month period at Brooke Army Medical Center (BAMC). Complications included emergency room visits or admissions for pain control, dehydration, respiratory distress or bleeding. Data was analyzed for patient characteristics and presence of a preoperative evaluation of sleep disordered breathing to see if they correlated with complication rates in children undergoing tonsillectomy. Chi-Squared tests were used to analyze relevant categorical data.

Results

372 adenotonsillectomy cases were identified. Pre-operative polysomnography rate amongst our patient population was 67%. There was a statistical significance in the complication rate for those that underwent preoperative PSG compared to those that did not at 15.3% and 3.8%, respectively (p=0.002). There was a trend toward increased risk of complications based on the severity of OSA measured by increasing apnea-hypopnea index, but no statistical difference was found. There was no statistically significant difference in complication rate based on gender.

Conclusion

The rate of pre-operative polysomnography within our cohort was higher than cited in other studies. There was a significant increased risk of complications in patients that had PSG prior to adenotonsillectomy, but increased OSA severity was not significantly correlated with higher rates of complications. These findings contribute to the data regarding appropriate use of PSGs prior to adenotonsillectomy in children, but further research is needed to completely stratify post-operative risk for these patients.

Disclaimer

The view(s) expressed herein are those of the author(s) and do not reflect the official policy or position of Brooke Army Medical Center, the U.S. Army Medical Department, the U.S. Army Office of the Surgeon General, the Department of the Air Force, the Department of the Army or the Department of Defense or the U.S. Government. The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02_AFI 40-402.

PSG (NM7) - Complication (NM7)

Complication	PSG (NM7)	Count	%	Total
PSG	0	402	100%	402
PSG	1	30	7.5%	30
PSG	2	10	2.5%	10
PSG	3	5	1.3%	5
PSG	4	2	0.5%	2
PSG	5	1	0.3%	1
PSG	6	1	0.3%	1
PSG	7	1	0.3%	1
PSG	8	1	0.3%	1
PSG	9	1	0.3%	1
PSG	10	1	0.3%	1
PSG	11	1	0.3%	1
PSG	12	1	0.3%	1
PSG	13	1	0.3%	1
PSG	14	1	0.3%	1
PSG	15	1	0.3%	1
PSG	16	1	0.3%	1
PSG	17	1	0.3%	1
PSG	18	1	0.3%	1
PSG	19	1	0.3%	1
PSG	20	1	0.3%	1
PSG	21	1	0.3%	1
PSG	22	1	0.3%	1
PSG	23	1	0.3%	1
PSG	24	1	0.3%	1
PSG	25	1	0.3%	1
PSG	26	1	0.3%	1
PSG	27	1	0.3%	1
PSG	28	1	0.3%	1
PSG	29	1	0.3%	1
PSG	30	1	0.3%	1
PSG	31	1	0.3%	1
PSG	32	1	0.3%	1
PSG	33	1	0.3%	1
PSG	34	1	0.3%	1
PSG	35	1	0.3%	1
PSG	36	1	0.3%	1
PSG	37	1	0.3%	1
PSG	38	1	0.3%	1
PSG	39	1	0.3%	1
PSG	40	1	0.3%	1
PSG	41	1	0.3%	1
PSG	42	1	0.3%	1
PSG	43	1	0.3%	1
PSG	44	1	0.3%	1
PSG	45	1	0.3%	1
PSG	46	1	0.3%	1
PSG	47	1	0.3%	1
PSG	48	1	0.3%	1
PSG	49	1	0.3%	1
PSG	50	1	0.3%	1
PSG	51	1	0.3%	1
PSG	52	1	0.3%	1
PSG	53	1	0.3%	1
PSG	54	1	0.3%	1
PSG	55	1	0.3%	1
PSG	56	1	0.3%	1
PSG	57	1	0.3%	1
PSG	58	1	0.3%	1
PSG	59	1	0.3%	1
PSG	60	1	0.3%	1
PSG	61	1	0.3%	1
PSG	62	1	0.3%	1
PSG	63	1	0.3%	1
PSG	64	1	0.3%	1
PSG	65	1	0.3%	1
PSG	66	1	0.3%	1
PSG	67	1	0.3%	1
PSG	68	1	0.3%	1
PSG	69	1	0.3%	1
PSG	70	1	0.3%	1
PSG	71	1	0.3%	1
PSG	72	1	0.3%	1
PSG	73	1	0.3%	1
PSG	74	1	0.3%	1
PSG	75	1	0.3%	1
PSG	76	1	0.3%	1
PSG	77	1	0.3%	1
PSG	78	1	0.3%	1
PSG	79	1	0.3%	1
PSG	80	1	0.3%	1
PSG	81	1	0.3%	1
PSG	82	1	0.3%	1
PSG	83	1	0.3%	1
PSG	84	1	0.3%	1
PSG	85	1	0.3%	1
PSG	86	1	0.3%	1
PSG	87	1	0.3%	1
PSG	88	1	0.3%	1
PSG	89	1	0.3%	1
PSG	90	1	0.3%	1
PSG	91	1	0.3%	1
PSG	92	1	0.3%	1
PSG	93	1	0.3%	1
PSG	94	1	0.3%	1
PSG	95	1	0.3%	1
PSG	96	1	0.3%	1
PSG	97	1	0.3%	1
PSG	98	1	0.3%	1
PSG	99	1	0.3%	1
PSG	100	1	0.3%	1

OSA Severity (B1023) - Complication (NM7)

Complication	OSA Severity (B1023)	Count	%	Total
OSA	0	11	2.5%	11
OSA	1	10	2.3%	10
OSA	2	10	2.3%	10
OSA	3	10	2.3%	10
OSA	4	10	2.3%	10
OSA	5	10	2.3%	10
OSA	6	10	2.3%	10
OSA	7	10	2.3%	10
OSA	8	10	2.3%	10
OSA	9	10	2.3%	10
OSA	10	10	2.3%	10
OSA	11	10	2.3%	10
OSA	12	10	2.3%	10
OSA	13	10	2.3%	10
OSA	14	10	2.3%	10
OSA	15	10	2.3%	10
OSA	16	10	2.3%	10
OSA	17	10	2.3%	10
OSA	18	10	2.3%	10
OSA	19	10	2.3%	10
OSA	20	10	2.3%	10
OSA	21	10	2.3%	10
OSA	22	10	2.3%	10
OSA	23	10	2.3%	10
OSA	24	10	2.3%	10
OSA	25	10	2.3%	10
OSA	26	10	2.3%	10
OSA	27	10	2.3%	10
OSA	28	10	2.3%	10
OSA	29	10	2.3%	10
OSA	30	10	2.3%	10
OSA	31	10	2.3%	10
OSA	32	10	2.3%	10
OSA	33	10	2.3%	10
OSA	34	10	2.3%	10
OSA	35	10	2.3%	10
OSA	36	10	2.3%	10
OSA	37	10	2.3%	10
OSA	38	10	2.3%	10
OSA	39	10	2.3%	10
OSA	40	10	2.3%	10
OSA	41	10	2.3%	10
OSA	42	10	2.3%	10
OSA	43	10	2.3%	10
OSA	44	10	2.3%	10
OSA	45	10	2.3%	10
OSA	46	10	2.3%	10
OSA	47	10	2.3%	10
OSA	48	10	2.3%	10
OSA	49	10	2.3%	10
OSA	50	10	2.3%	10
OSA	51	10	2.3%	10
OSA	52	10	2.3%	10
OSA	53	10	2.3%	10
OSA	54	10	2.3%	10
OSA	55	10	2.3%	10
OSA	56	10	2.3%	10
OSA	57	10	2.3%	10
OSA	58	10	2.3%	10
OSA	59	10	2.3%	10
OSA	60	10	2.3%	10
OSA	61	10	2.3%	10
OSA	62	10	2.3%	10
OSA	63	10	2.3%	10
OSA	64	10	2.3%	10
OSA	65	10	2.3%	10
OSA	66	10	2.3%	10
OSA	67	10	2.3%	10
OSA	68	10	2.3%	10
OSA	69	10	2.3%	10
OSA	70	10	2.3%	10
OSA	71	10	2.3%	10
OSA	72	10	2.3%	10
OSA	73	10	2.3%	10
OSA	74	10	2.3%	10
OSA	75	10	2.3%	10
OSA	76	10	2.3%	10
OSA	77	10	2.3%	10
OSA	78	10	2.3%	10
OSA	79	10	2.3%	10
OSA	80	10	2.3%	10
OSA	81	10	2.3%	10
OSA	82	10	2.3%	10
OSA	83	10	2.3%	10
OSA	84	10	2.3%	10
OSA	85	10	2.3%	10
OSA	86	10	2.3%	10
OSA	87	10	2.3%	10
OSA	88	10	2.3%	10
OSA	89	10	2.3%	10
OSA	90	10	2.3%	10
OSA	91	10	2.3%	10
OSA	92	10	2.3%	10
OSA	93	10	2.3%	10
OSA	94	10	2.3%	10
OSA	95	10	2.3%	10
OSA	96	10	2.3%	10
OSA	97	10	2.3%	10
OSA	98	10	2.3%	10
OSA	99	10	2.3%	10
OSA	100	10	2.3%	10

OSA Severity (B1023) - Complication (NM7)

Complication	OSA Severity (B1023)	Count	%	Total
OSA	0	11	2.5%	11
OSA	1	10	2.3%	10
OSA	2	10	2.3%	10
OSA	3	10	2.3%	10
OSA	4	10	2.3%	10
OSA	5	10	2.3%	10
OSA	6	10	2.3%	10
OSA	7	10	2.3%	10
OSA	8	10	2.3%	10
OSA	9	10	2.3%	10
OSA	10	10	2.3%	10
OSA	11	10	2.3%	10
OSA	12	10	2.3%	10
OSA	13	10	2.3%	10
OSA	14	10	2.3%	10
OSA	15	10	2.3%	10
OSA	16	10	2.3%	10
OSA	17	10	2.3%	10
OSA	18	10	2.3%	10
OSA	19	10	2.3%	10
OSA	20	10	2.3%	10
OSA	21	10	2.3%	10
OSA	22	10	2.3%	10
OSA	23	10	2.3%	10
OSA	24	10	2.3%	10
OSA	25	10	2.3%	10
OSA	26	10	2.3%	10
OSA	27	10	2.3%	10
OSA	28	10	2.3%	10
OSA	29	10	2.3%	10
OSA	30	10	2.3%	10
OSA	31	10	2.3%	10
OSA	32	10	2.3%	10